

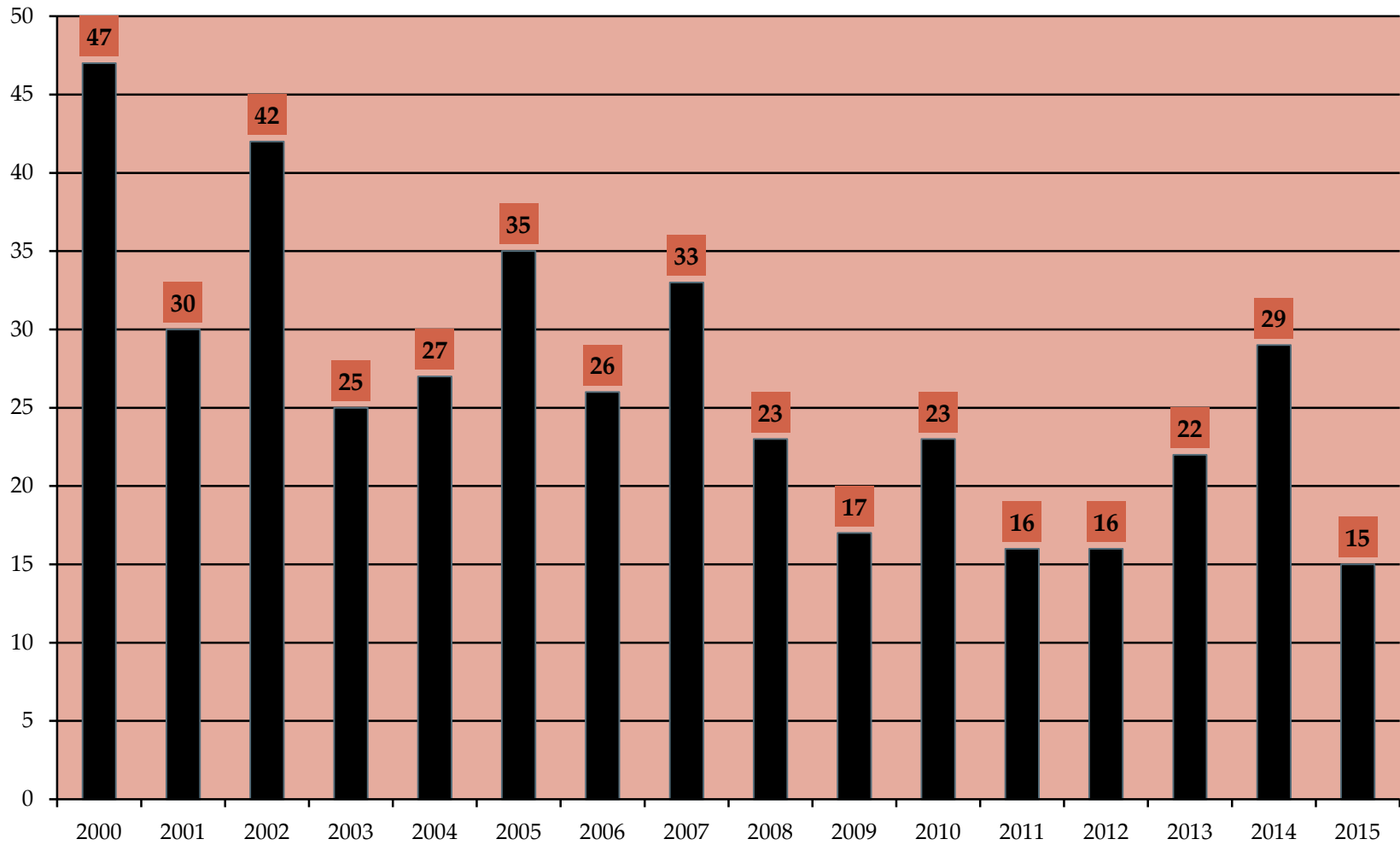
# **Neal Merrifield**

**Administrator**

**Metal and Nonmetal Mine Safety and Health  
Mine Safety & Health Administration**

**Stakeholder Meeting  
December 1, 2015**

## MNM Fatalities - 2000 - 2015



As of November 30, 2015

# **Metal and Nonmetal Initiatives since August 3, 2015**

## **Focus Enforcement**

53 fatalities from October 2013 – August 3, 2015  
Inspections focused on past 53 fatalities  
20 Impact Inspections

## **Initiatives**

Workplace Exams  
Seasonal Safety  
Confined Space

August 2015  
October 2015  
November 2015

# **Metal and Nonmetal Initiatives since August 3, 2015**

## **Outreach**

Walk and Talks

Coal Inspectors

EFSMS

MNM Inspectors

Weekly Near Miss and Serious Accident Alerts

Trainer Quarterly conference calls

Met with 26 Associations

Attended 10 Conferences

Regional Stakeholders Meetings

- North Carolina Aggregates Assoc.

# Metal and Nonmetal Initiatives since August 3, 2015

## Stakeholders Involvement

NSSGA issued a CEO newsletter, issued a blog of fatal reduction and sent the seasonal alert to all members.

IMA in conjunction with MSHA issue a Confined Space Entry Alert

PCA issued a CEO newsletter

Hosted meetings with their members and sent out the fatal reduction information

Colorado Stone Sand and Gravel Assoc.

Tennessee Mining Assoc.

Maine Aggregates Association

South Carolina Mining Assoc.

Ohio Aggregates

Pennsylvania Bluestone Assoc.

Pennsylvania Aggr. and Concrete Assoc.

Kansas Sunflower Safety Council

California Construction and Industrial Materials Assoc.

Montana Mining Association

Nevada Mining Association

Alaska Miners Association

North Carolina Aggr. Assoc.

Oregon Concrete & Aggregate Producers Assoc.

Washington Aggregate & Concrete Assoc.

Oregon Concrete and Aggregate Producers Assoc.

Ga Crushed Agg Assoc & Ga Mining Assoc.

Puerto Rico Associated Industries

Indiana Aggregate Producers Assoc.

Iowa Aggregate Assoc.

Illinois Aggregate Assoc.

Michigan Aggregate Assoc.

Minnesota Mine Safety Assoc.

Joseph Holmes Association of Michigan

North Texas JA Holmes Assoc.

Oklahoma Aggregate Assoc.

Missouri Mine Rescue Assoc.

Kansas City Mine Rescue Assoc

# **Metal and Nonmetal Initiatives since August 3, 2015**

## **Stakeholders Involvement - Examples**

- Maine Aggregates Association in Partnership with Maine AGC did a webinar broadcast to highlight near miss accidents and fatality trends.
- Hanson Aggregates conducted an offsite safety conference with four of their plants the information was presented by MSHA, their members of management then shared the information throughout their NE region within their mine operations.
- Lehigh Cement, Union Bridge distributed the information within their Union Bridge MD, Plant
- The Nyrstar underground has refreshed that confine spaces procedures will be reviewed by contractors and miner personnel and a JSA be conducted before entering any confined spaced.
- Vulcan is starting mock workplace examination inspections by planting “dummy” hazards for miners to observe upon entering their workplace. By doing this, miners have found even more hazards
- Lexington Quarry has started posting all fatalgrams on the break room after discussing them during safety meetings. Miners are now discussing these amongst themselves.
- Kentucky Solite started compiling a notebook of the 52 fatalgrams and distributed it to all miners after our on-site discussions.
- Riverside Underground installed a new bulletin board after our safety talk that is used for the sole purpose of reminding miners to do thorough workplace examinations before starting their shift.
- Hilltop Mining started sending miners from one quarry to another to conduct audits after hearing our safety initiative message.
- Pine Bluff Materials has the following initiative: Serious Injury and Fatality Prevention

# Seasonal Safety Alert

- Increased Fatalities during Fall
- Alert calls attention to Hazardous Tasks & Conditions
- Best Practices to Prevent Them
- Alert posted on MSHA's Website

## Seasonal Safety Alert

During the fall, many intermittent mines are preparing for the winter season and performing annual shutdown or repair activities. During this time miners may be performing new or unfamiliar tasks, working with equipment they service only once a year, or working in a reduced-sized workforce.

This time of the year has historically seen a large number of powered haulage and machinery fatalities that occurred while disassembling portable plants, moving equipment into storage and breaking down equipment for major repairs.

For example, a front end loader operator died at a sand and gravel operation when he was caught between a conveyor frame and the bucket of an excavator. He was attaching chains to the conveyor section preparing to move it.



An equipment operator preparing to move a portable plant's conveyor head pulley section was struck and killed by the falling conveyor as he rigged it for lifting.



A crusher operator was killed when he was struck by a tire assembly on a conveyor belt. The bucket of a front end loader dropped suddenly while it was supporting the conveyor during disassembly.

### Possible hazardous tasks

- Disassembling conveyors and transporting and storing sections
- Accessing pumping stations, especially floating pump decks
- Rigging, lifting and towing equipment
- Rebuilding crushers and screens
- Winterizing sand wash facilities

### Possible hazardous conditions

- Unfamiliarity with tasks or equipment
- Working around water
- Working at height
- Working in cold weather, snow or ice

### Best practices

- Identify hazards through effective workplace exams
- Control hazards through detailed work plan
- Provide effective task training based on work plan
- Lock out and block equipment against hazardous motion
- Provide necessary PPE

# CONFINED SPACE ENTRY

- May not be recognized and controlled
- Examples of confined space fatal accidents
  - Engulfment in material upon bin entry
  - Oxygen deficiency in bulk material transportation equipment
  - Toxic atmospheres in process vessels and equipment

## CONFINED SPACE ENTRY HAZARD ALERT

Unsafe work in confined spaces has led to miner deaths and injuries in the metal and nonmetal mining industry. Recent tragic incidents include: a fatality while cleaning the inside of a tanker railcar and a miner being severely burned during maintenance of a baghouse screw hopper. To address these regrettable occurrences, special emphasis should be placed on enforcing MSHA standards related to entering bins, hoppers, silos, tanks, and surge piles. A best practice is to conduct a hazard assessment and implement a permitting system as part of a safe entry standard operating procedure (SOP).

### Best Practices

- Identify all possible confined spaces at a mine and associated hazards.
- Inform miners by posting danger signs "Confined Space Do Not Enter Permit Required" - Do not allow unauthorized entry.
- Plan - Establish a written SOP that includes a permit to work and enter system, communication and emergency plan and train miners on the plan.
- Identify authorized entrants.
- Isolate the space. Assure energy sources are deenergized (lockout & tag out).
- Conduct pre-entry testing. Test the internal atmosphere for oxygen content, flammable gases and vapor, and potential toxic air contaminants.
- Monitor the atmosphere. Continuously monitor conditions in areas where authorized entrants are working. Provide an early-warning system. Assure that monitoring procedures will detect an increase in atmospheric hazard levels in sufficient time for the entrants to safely exit the permit space.
- Do not enter an area that has less than 19.5% oxygen.
- Assign an "attendant" – someone to maintain contact with the entrant while they are in the confined space.
- **Do NOT enter a confined space in an attempt to rescue a downed employee or co-worker if you don't know the atmospheric condition or have special lifesaving equipment. Rescue attempts in a toxic atmosphere by untrained personnel are extremely dangerous and can lead to multiple deaths.**



### MSHA standards related to hazards of entering bins, hoppers, silos, tanks, and surge piles

- CFR Parts 56/57.16002 - Bins, hoppers, silos, tanks, and surge piles have to be equipped with mechanical devices or other effective means of handling material to assure that miners are not required to enter or work in areas where they are subject to being entrapped by either caving or sliding materials during normal mine operations. If miners have to enter areas to perform maintenance or inspection work, ladders, platforms, or staging equipment has to be provided. No miner is permitted to enter a facility until the supply and discharge of materials has ceased and the supply and discharge equipment is locked out. Miners entering the area shall wear a safety belt or harness equipped with a lifeline properly fastened. A second person, similarly equipped, has to be stationed near the lifeline fastening and constantly adjust the lifeline to assure minimum slack.
- CFR Part 56/57.14105 – Repair and maintenance is performed only when machinery or equipment is powered off and miners are protected against hazardous motion.
- CFR Parts 56/57.15006 & .5005 - Protective equipment and clothing and proper respiratory protection has to be available and in reliable condition whenever hazards or irritants exist. Assure monitors are properly calibrated.
- CFR Parts 56/57.5001 & .5002 - Measurement of airborne exposure limits and monitoring of dust, gas, and fumes has to be conducted to determine the adequacy of control measures.
- CFR Part 57.5015 – A minimum 19.5% volume of oxygen content has to be maintained in active underground work areas.
- CFR Parts 46 & 48 - Miners must be trained and retrained.



\* This product was developed as part of the MSHA Alliance Program. It does not necessarily reflect the official views of MSHA. Use of the Alliance Program logo is reserved for MSHA and its Alliance partners. The MSHA Alliance Program is to promote miner safety and health through voluntary partnerships, which provide training and education, outreach, technical assistance, and a national dialog on mine safety and health. For more information, contact MSHA at (202) 693-9414 or <http://www.msha.gov/alliances/alliances.htm>.





# “GO HOME FOR THE HOLIDAYS” WORK SAFELY

- Maintain focus on safety
- Stay mindful of the potential hazards and dangers in the mining workplace
- In 2010, MSHA investigated four fatalities that occurred during December

## “GO HOME FOR THE HOLIDAYS” WORK SAFELY

During the holiday season, it can be easy to lose focus on matters that seem routine. At times like this, our thoughts can drift rather than staying focused on the important duties we are performing. Historically in December, one or more miners lose their lives. MSHA investigated four fatal accidents in December 2010 alone.

MSHA would like to remind everyone how important it is to maintain your focus on safety. Take a minute to think about each task you are about to perform as you go about your daily work. Take all of the necessary safety precautions so that you, your co-workers, and families can continue to enjoy the holidays for many years to come. Stay mindful of the hazards and dangers in the mining workplace that, if lost sight of even briefly, can bring unwanted tragedy to our lives. Fix all the hazards you find and don't take risks.



### BEST PRACTICES

- Task train all persons to recognize all potential hazardous conditions that can decrease bank or slope stability and ensure they understand safe job procedures for elimination of the hazards.
- Train persons to recognize the hazards of working near belt conveyors.
- De-energize and block belt conveyors against motion before working near a chute, drive, head, tail, and take-up pulleys.
- Lock-out/tag-out all energy sources to belt conveyors before working on them.
- Always use fall protection when working where a fall-to-below hazard exists.
- Establish policies and procedures for safely clearing plugged material in a jaw crusher.
- Maintain and use all available methods of communication, such as sirens and radios, to warn persons of an impending blast. Establish methods to ensure that all persons are out of the blasting area.
- Always wear a life jacket where there is a danger of falling into the water.



# **Metal and Nonmetal Future Initiatives**

Lock Out/Tag Out

January 2016

Spring Thaw Meetings

March 2016 – May 2016

2<sup>nd</sup> Deadliest Month

April 2016

Continue What Works

- Focus Inspections

- Walk and Talks

- Regional Stakeholders Meetings

- Near Miss alerts

- Month Initiatives

## Fatals During Aug 4 through Nov 30

